

Docket: AP9671
Serial No. 10/031,686

PATENT

Amendments to the Claims

1-15 (Canceled)

16. (Currently Amended) A method for controlling a vehicle on a gravel road, wherein the rotation behavior of the individual wheels is measured and evaluated in order to determine the vehicle reference speed, wheel slip, wheel acceleration and other control values used for proportioning or modulating the brake pressure in the wheel brakes of the wheels being controlled or for an intervention in the engine management, comprising the steps of:

- A) detecting a gravel road condition including detecting and evaluating the vibration behavior of ~~individual~~ at least two vehicle wheels wherein said detecting and evaluating step is directed solely to driven wheels,
- B) detecting and evaluating the wheel acceleration on at least two wheels of said vehicle,
- C) activating a control function on said at least two wheels when said vibration behavior of step A) and said wheel acceleration of step B) both exceed respectively associated threshold values.

17. (Previously Presented) Method as claimed in claim 16, wherein a gravel road is considered to have been identified or a corresponding control function of the vehicle control system is only activated when the period of a vibration on at least two driven wheels lies within a specified range (T_1 , T_2) or when the period of a vibration on at least two driven wheels reaches a specified limit value.

18. (Previously Presented) Method as claimed in claim 16, wherein the associated threshold value in step B) is specified within a range of 1g to 2g.

19. (Previously Presented) Method as claimed in claim 16, the method further comprising a gravel road is considered to have been identified or a corresponding control

Docket: AP9671
Serial No. 10/031,686

PATENT

function of the vehicle control system is only activated when the period of a vibration on at least two driven wheels lies within a specified range (T_1 , T_2) or when the period of a vibration on at least two driven wheels reaches a specified limit value, wherein a the specified range (T_1 , T_2) falls between 30 msec. and 150 msec. Inclusively, or wherein the specified limit values of the period of vibration is generally 50 msec.

20. (Previously Presented) Method as claimed in claim 16, wherein a gravel road is then considered to have been identified or a corresponding control function of the vehicle control system is only activated when the driven wheels exhibit a specified traction slip.

21. (Previously Presented) Method as claimed in claim 16, the method further comprising a gravel road is then considered to have been identified or a corresponding control function of the vehicle control system is only activated when the driven wheels exhibit a specified traction slip, wherein a traction slip is specified within a range of 0 km/h to 50 km/h.

22. (Previously Presented) Method as claimed in claim 16, wherein a gravel road is then considered to have been identified or a corresponding control function of the vehicle control system is only activated when the calculated or estimated vehicle reference speed (V_{ref}) falls below a specified vehicle speed limit value (V_{lim}).

23. (Previously Presented) Method as claimed in claim 16, the method further comprising a gravel road is then considered to have been identified or a corresponding control function of the vehicle control system is only activated when the calculated or estimated vehicle reference speed (V_{ref}) falls below a specified vehicle speed limit value (V_{lim}), wherein a vehicle speed limit value (V_{lim}) is specified within a range of 60 km/h to 100 km/h.

24. (Cancelled)

Docket: AP9671
Serial No. 10/031,686

PATENT

25. (Previously Presented) Method as claimed in claim 16, wherein a gravel road is then considered to have been identified or a corresponding control function of the vehicle control system is only activated when the conditions for a gravel road were identified in a vehicle with one driven axle on both wheels on the driven axle.

26. (Currently Amended) Method as claimed in claim 16, wherein said control function includes at least one of an anti-lock system (ABS), traction slip control (TCS) or driving-dynamics control system (ESP) (~~EDS~~).

27. (Previously Presented) Method as claimed in claim 16, wherein an engine control threshold is predefined in a range of 2 km/h to 10 km/h, or a brake control threshold is predefined in a range of 0 km/h to 10 km/h.

28. (Currently Amended) Method for controlling a vehicle, using an anti-lock system (ABS), traction slip control (TCS) or driving-dynamics control system (ESP), in which the rotation behavior of the individual wheels is measured and evaluated to determine the vehicle reference speed, wheel slip, wheel acceleration and other control values used for evaluating or modulating the brake pressure in the wheel brakes of the wheels being controlled or an intervention in the engine management, the method comprising the steps of:

detecting the presence ~~pressure~~ of a gravel road by, in part, detecting and evaluating the vibration behavior of individual at least two vehicle wheels, wherein said detecting and evaluating step is directed solely to driven wheels,

increasing an engine control threshold or brake control threshold to a specified value after a gravel road has been identified, and predefining an engine control threshold in a range of 2 km/h to 10 km/h, or a brake control threshold in a range of 0 km/h to 10 km/h, wherein the brake control threshold is increased only when strongly overspeeding wheels are detected.

Docket: AP9671
Serial No. 10/031,686

PATENT

29. (Currently Amended) Circuit arrangement for controlling a vehicle, using an anti-lock system (ABS), traction slip control (TCS) or driving-dynamics control system (ESP), comprising:

an identification circuit to identify a gravel road or a similar road with higher slip requirement, wherein said identification circuit includes means for detecting and evaluating the vibration behavior of at least two individual vehicle wheels, wherein said detecting and evaluating step is directed solely to driven wheels,

a detection circuit for detecting the vibration behavior of the individual wheels is associated with the identification circuit, wherein the output of the detection circuit is connected to an input of an evaluation circuit for evaluating the detected vibration behavior of the at least two individual wheels, and wherein the identification circuit exhibits an integrator and a signal generator for generating a signal when a certain vibration behavior typical for gravel roads is detected on the wheels over a period of time predefined by the integrator with the help of the evaluation of the evaluation circuit.

30. (Previously Presented) Circuit arrangement as claimed in claim 29, wherein a calculating circuit is associated with the identification circuit, and wherein the calculating circuit calculates the vehicle reference speed and wherein an output of the calculating circuit is connected to an input of a first comparator which is used for comparing the calculated vehicle reference speed with a specified limit value and is connected via an output to an input of the evaluation circuit which compares the detected vibration behavior of the individual wheels, in particular the period of vibration, with specified limit values;

wherein the identification circuit exhibits a second comparator for comparing the wheel acceleration with a wheel acceleration limit value, a third comparator for comparing the vibration behavior of the individual wheels to one another, and a fourth comparator for comparing the traction slip of the wheels with a specified limit value; and that the signal generator is connected via an output to an input of a device used for intervening in the brake control or engine control when an appropriate signal for an identified driving situation on a gravel road is emitted.